

WHAT IS CLAIMED IS:

1. A method for securely storing a public key for encryption of data in a computing device,
5 the method using a user-specific key pair which is securely stored in the computing device, the method comprising:
 - a receiving step of receiving a target public key corresponding to a target device;
 - 10 an obtaining step of obtaining a user-specific key pair from a secure registry;
 - a key encrypting step of using a user-specific private key from the user-specific key pair to create a target key verifier based on the target public key;
 - 15 a storing step of storing the target key verifier and the target public key in a storage area;
 - a retrieving step of retrieving the target key verifier and the target public key from the storage area;
 - 20 a verification step of applying a user-specific public key from the user-specific key pair to the target key verifier for verifying the authenticity of the target public key; and
 - 25 a data encrypting step of encrypting data with the target public key, in the case that the authenticity of the target public key is verified, thereby creating encrypted data for transmission to
30 the target device.

2. A method according to Claim 1, wherein
the user-specific key pair is obtained from a key
function call which is supported by an operating
system executing in the computing device.

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3. A method according to Claim 2, wherein
the operating system securely maintains a user-
specific key pair for each of a plurality of users
of the computing device.

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4. A method according to Claim 3, wherein
each user-specific key pair can only be accessed by
providing the operating system with user
identification data corresponding to the user-
specific key pair.

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5. A method according to Claim 1, wherein
the target key verifier created in the key
encrypting step is an encrypted version of the
target public key.

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6. A method according to Claim 5, wherein
the target key verifier is created by encrypting the
target public key with the user-specific private key
using an encryption algorithm.

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7. A method according to Claim 5, wherein
the verification step includes decrypting the target
key verifier with the user-specific public key using
a decryption algorithm.

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8. A method according to Claim 7, wherein
the verification step further includes using a key
verification algorithm to compare the decrypted
target key verifier to the target public key for
5 verifying the authenticity of the target public key.

9. A method according to Claim 8, wherein
the verification step is performed by a verification
function call which is supported by an operating
10 system executing in the computing device.

10. A method according to Claim 1, wherein
the target key verifier created in the key
encrypting step is a digital signature of the target
15 public key.

11. A method according to Claim 10,
wherein the digital signature of the target public
key is created by applying a hashing algorithm to
20 the target public key to obtain a target key hash,
and then encrypting the target key hash with the
user-specific private key using an encryption
algorithm.

25 12. A method according to Claim 10,
wherein the digital signature of the target public
key is created by applying a hashing algorithm to
the target public key to obtain a target key hash,
and then subjecting the target key hash to a
30 security algorithm.

13. A method according to Claim 12,
wherein the verification step includes decrypting
the target key verifier with the user-specific
public key using a decryption algorithm to obtain a
5 decrypted target key hash.

14. A method according to Claim 13,
wherein the verification step further includes
reapplying a hashing algorithm to the target public
10 key to obtain a new target key hash and using a hash
verification algorithm to compare the decrypted
target key hash to the new target key hash for
verifying the authenticity of the target public key.

15 15. A method according to Claim 14,
wherein the verification step is performed by a
verification function call which is supported by an
operating system executing in the computing device.

20 16. A method according to Claim 1, wherein
the receiving step includes applying a hashing
algorithm to the received target public key to
obtain a received target key hash and using a hash
verification algorithm to compare the received
target key hash to a test target key hash for
25 verifying the authenticity of the received target
public key.

30 17. A method according to Claim 16,
wherein the test target key hash is input by a user.

18. A method according to Claim 17,
wherein the target device is a printer and wherein
the test target key hash is obtained from a test
page printed by the printer.

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19. A method according to Claim 1, wherein
the target device is a printer and the target public
key is a printer public key.

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20. A method according to Claim 19,
wherein, in the receiving step, the printer public
key is received in response to a key request sent to
the printer.

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21. A method according to Claim 19,
wherein the method is performed in a printer driver
executing on the computing device.

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22. A method for securely storing a
printer public key for encryption of print data in a
computing device, the method using a user-specific
key pair which is securely stored in the computing
device, the method comprising:

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a receiving step of receiving a printer
public key corresponding to a printer;

an obtaining step of obtaining a user-
specific key pair from a secure registry upon
receipt of a corresponding user identification;

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a first hashing step of applying a hashing
algorithm to the printer public key to create a
first printer key hash;

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an encryption step of applying an
encryption algorithm to encrypt the first printer
key hash with a user-specific private key from the
user-specific key pair, thereby creating a printer
key signature;

5 a storing step of storing the printer key
signature and the printer public key in a storage
area;

10 a retrieving step of retrieving the printer
key signature and the printer public key from the
storage area;

a second hashing step of applying the
hashing algorithm to the retrieved printer public
key to create a second printer key hash;

15 a decrypting step of applying a decryption
algorithm to decrypt the printer key signature with
a user-specific public key from the user-specific
key pair, thereby retrieving the first printer key
hash;

20 a verification step of applying a
verification algorithm to compare the first printer
key hash with the second printer key hash, for
verifying the authenticity of the retrieved printer
public key; and

25 a print data encrypting step of applying an
encryption algorithm to print data using the
retrieved printer public key, in the case that the
authenticity of the retrieved printer public key is
verified, to create encrypted print data for
30 transmission to the printer.

23. A method for authentication of a printer public key received by a computing device, the method comprising:

5 a first receiving step of receiving in the computing device a printer public key corresponding to a printer;

a hashing step of applying a hashing algorithm to the printer public key to create a first printer key hash;

10 a second receiving step of receiving in the computing device a predetermined second printer key hash obtained from a test page printed by the printer, wherein the second printer key hash is input into the computing device by a user-input means connected to the computing device;

15 a verification step of applying a verification algorithm to compare the first printer key hash with the second printer key hash, for verifying the authenticity of the received printer public key; and

20 a storing step of storing, in the case that the authenticity of the received printer public key is verified in the verification step, the received printer public key in a memory area of the computing device.

25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605 610 615 620 625 630 635 640 645 650 655 660 665 670 675 680 685 690 695 700 705 710 715 720 725 730 735 740 745 750 755 760 765 770 775 780 785 790 795 800 805 810 815 820 825 830 835 840 845 850 855 860 865 870 875 880 885 890 895 900 905 910 915 920 925 930 935 940 945 950 955 960 965 970 975 980 985 990 995 1000 1005 1010 1015 1020 1025 1030 1035 1040 1045 1050 1055 1060 1065 1070 1075 1080 1085 1090 1095 1100 1105 1110 1115 1120 1125 1130 1135 1140 1145 1150 1155 1160 1165 1170 1175 1180 1185 1190 1195 1200 1205 1210 1215 1220 1225 1230 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30 a program memory for storing process steps executable to perform a method according to any of

Claims 1 to 23; and

a processor for executing the process steps stored in said program memory.

25. Computer-executable process steps
5 stored on a computer readable medium, said computer- executable process steps for authenticating a public key for encryption of data, said computer-executable process steps comprising process steps executable to perform a method according to any of Claims 1 to 23.

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26. A computer-readable medium which stores computer-executable process steps, the computer-executable process steps to authenticate a public key for encryption of data, said computer- executable process steps comprising process steps executable to perform a method according to any of Claims 1 to 23.